IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A method of forming a planar lipid-bilayer membrane for membrane protein analysis, the method comprising:

(a) filling a microchannel with a first buffer solution, the microchannel being disposed under a horizontal partition wall having an aperture;

(b) applying a small amount of a lipid solution as a droplet to the aperture filled with the buffer solution to form a thin layer of the lipid solution in a chamber, the chamber being formed at a position corresponding to the aperture of the partition wall and being provided with a liquid trap on the partition wall inside the chamber; and

(c) applying [[the]] a second buffer solution as a droplet to the chamber from the upper side of the chamber, thereby forming a planar lipid-bilayer membrane,

wherein the first buffer solution and the second buffer solution are the same or different, and

wherein the lipid solution comprises unarranged phospholipids, each of which having a hydrophilic group and a hydrophobic group, and which form the planar lipid bilayer upon the applying of the second buffer solution in (c).

Claim 2 (Previously Presented): The method of claim 1, wherein a thickness of the thin layer of the lipid solution is controlled.

Claim 3 (Previously Presented): The method of claim 1, wherein the buffer solution comprises a liposome, which is a spherical vesicle of a lipid-bilayer membrane, incorporated

with an objective membrane protein, and the liposome is fused with the planar lipid-bilayer membrane to incorporate the membrane protein into the planar lipid-bilayer membrane.

Claim 4 (Previously Presented): The method of claim 1, wherein a plurality of the chambers are integrally formed.

Claim 5 (Previously Presented): The method of claim 4, wherein the plurality of the chambers are formed in an array.

Claim 6 (Previously Presented): The method of claim 4, wherein liposomes each comprising a different protein are each applied to a different chamber, and different kinds of proteins are simultaneously measured.

Claim 7 (Previously Presented): The method of claim 4, wherein a reaction and/or binding of different kinds of reagents or different kinds of proteins in each of the chambers is simultaneously measured.

Claim 8 (Previously Presented): The method of claim 4, wherein a temperature of each chamber is independently controlled, liposomes each comprising a different protein are each applied to a different chamber, and the proteins different in temperature are simultaneously measured.

Claim 9 (Currently Amended): A device for forming a planar lipid-bilayer membrane for membrane protein analysis, the device comprising:

(a) a substrate;

(b) a partition wall disposed over the substrate so as to be parallel to the substrate;

(c) a microchannel defined by the substrate and the partition wall;

(d) a chamber provided with an aperture formed in the partition wall and a liquid trap, which is a trench formed at the periphery of the aperture that thins a solution added above the aperture; and

(e) a microinjection device for applying droplets of a lipid solution and a buffer solution to the chamber from the upper side of the chamber,

wherein the aperture is tapered, such that the diameter of the aperture narrows from the lower side toward the upper side.

Claim 10 (Previously Presented): The device according to claim 9, further comprising a first thin-film electrode disposed on the substrate at a position corresponding to the chamber and a second thin-film electrode disposed near the liquid trap.

Claim 11 (Previously Presented): The device according to claim 9, wherein the partition wall has a channel connected to the liquid trap for controlling the thickness of a layer of the lipid solution.

Claim 12 (Previously Presented): The device according to claim 9, wherein a plurality of chambers are integrally formed.

Claim 13 (Previously Presented): The device according to claim 12, wherein the plurality of the chambers are formed in an array.

Claim 14 (Previously Presented): The device according to claim 12, wherein the microinjection device further comprises a cover for positioning the microinjection device relative to each chamber.

Claim 15 (Previously Presented): The device according to claim 12, further comprising a means for applying liposomes, each comprising a different protein, to the respective chambers and simultaneously measuring the different kinds of proteins.

Claim 16 (Previously Presented): The device according to claim 12, further comprising a means for independently controlling the temperature of each chamber in an array, applying liposomes, each comprising a different protein, to the respective chamber, and simultaneously measuring the proteins different in temperature.

Claim 17 (Cancelled).

Claim 18 (Previously Presented): The device according to claim 9, wherein the partition wall is formed of a silicon substrate and the aperture is formed by etching the silicon substrate.

Claim 19 (Previously Presented): The device to claim 10, further comprising a means for measuring a property of the membrane protein by applying a voltage between the first thin-film electrode and the second thin-film electrode.

Claim 20 (Currently Amended): The method of claim 1, wherein the lipid solution comprises no arranged phospholipids ~~microstructure~~ in the form of a liposome or lipid bilayer.

Claim 21 (New): The method of claim 1, wherein the second buffer solution is different from the first buffer solution.